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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/748,215	12/27/2000	Munenori Iizuka	Q62482	5359

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Washington, DC 20037-3202

EXAMINER

PATTERSON, MARC A

ART UNIT	PAPER NUMBER
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1772

DATE MAILED: 07/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	09/748,215	IIZUKA ET AL.	
	Examiner	Art Unit	
	Marc A Patterson	1772	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

WITHDRAWN REJECTIONS

1. The 35 U.S.C 112 second paragraph rejections of Claims 6 – 8, of record on page 2 of the previous Action, are withdrawn.

The 35 U.S.C. 102(b) rejection of Claims 6 – 8 and 21 as being anticipated by Kawata et al (U.S. Patent No. 5,890,395), of record on page 3 of the previous Action, is withdrawn.

NEW REJECTIONS

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 6 – 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Kohno et al (U.S. Patent No. 6,002,897).

With regard to Claim 6 – 7, Kohno et al disclose a pipe (hollow cylindrical drum body; column 1, lines 20 – 21), the resin pipe having an integrally molded projection radially protruding outward from one end of its outer surface (bearing, therefore a flange formed on the entire outer circumference of one end of the outer surface; column 22, line 30; Figure 18) that is integrally molded (column 20, lines 37 – 39); the end opposes another end having a flange (column 22, line 29) and driving gear (driven gear; column 22, line 33), therefore formed integrally therewith, the projection having a curved object with a round top and a slope (semicircle; column 20, line 42).

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With regard to Claim 8, the pipe disclosed by Kohno et al is a photosensitive drum (column 10, lines 48 – 49) and is therefore mounted in an electrophotographic apparatus.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1 – 2 and 4 – 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bito et al. (U.S. Patent No. 5,983,055).

With regard to Claims 1 and 5, Bito et al disclose a resin pipe (cylindrical body of synthetic resin; column 1, lines 50 – 59), which is a base for a photosensitive drum (column 28, line 49), which is formed by injection molding a thermoplastic resin (nylon; column 29, lines 64 – 67; column 30, lines 1 – 7); the resin pipe has a tapered inner surface to facilitate demolding (column 27, lines 2 – 10). Bito et al fail to disclose a taper angle having a tangent between 0.5×10^{-3} and 2.5×10^{-3} . However, Bito et al. disclose a taper angle having a tangent of 3.6×10^{-3} (the size of the body is 270 – 280 mm, 27 mm inner diameter at one end and 28 mm inner diameter at the opposite end; column 27, lines 57 – 61; Figure 2) and teaches that the angle is selected depending on the desired mechanical strength (column 27, line 53). Therefore, one of ordinary skill in the art would have recognized the utility of varying the angle to obtain a desired mechanical strength. Therefore, the mechanical strength would be readily determined through

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routine optimization of the angle by one having ordinary skill in the art depending on the desired end use of the product.

It therefore would be obvious for one of ordinary skill in the art to vary the angle in order to obtain a desired mechanical strength, since the mechanical strength would be readily determined through routine optimization by one having ordinary skill in the art depending on the desired end result as shown by Bito et al

With regard to Claims 2 and 4, the pipe disclosed by Bito et al is formed by injection molding from an electrically conductive resin compound composed of a thermoplastic resin and a conducting material dispersed therein (carbon black, which is also a reinforcing inorganic filler; column 28, lines 1 – 2).

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawata et al (U.S. Patent No. 5,890,395) in view of Nishimuro et al (U.S. Patent No. 5,991,574).

Kawata et al disclose a resin pipe comprising polyphenylene sulfide as discussed above. Kawata et al fail to disclose a resin pipe comprising nylon 6 (nylon obtained from caprolactam).

Nishimuro et al teach that polyphenylene sulfide and nylon 6 are equivalent in the making of a resin pipe (column 3, lines 3 - 8) for the purpose of making a photosensitive drum having enhanced reliability (column 1, lines 65 – 66; column 2, lines 1 – 3). Therefore, one of ordinary skill in the art would have recognized the advantage of providing for the nylon 6 of Nishimuro et al in Kawata et al, which is a resin pipe, depending on the desired reliability of the end product.

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for nylon 6 in Kawata et al in order to make a photosensitive drum having enhanced reliability as taught by Nishimuro et al.

ANSWERS TO APPLICANT'S ARGUMENTS

7. Applicant's arguments regarding the 35 U.S.C 112 second paragraph rejections of Claims 6 – 8, 35 U.S.C. 102(b) rejection of Claims 6 – 8 and 21 as being anticipated by Kawata et al (U.S. Patent No. 5,890,395), of record on page 3 of the previous Action, have been considered and have been found to be persuasive. The rejections are therefore withdrawn. The new 35 U.S.C. 102(b) rejection of Claims 6 – 8 as being anticipated by Kohno et al (U.S. Patent No. 6,002,897) above is directed to amended Claims 6 – 8.

Applicant's arguments regarding the 35 U.S.C. 103(a) rejection of Claims 1 – 2 and 4 – 5 as being unpatentable over Bito et al. (U.S. Patent No. 5,983,055) and 35 U.S.C. 103(a) rejection of Claim 9 as being unpatentable over Kawata et al (U.S. Patent No. 5,890,395) in view of Nishimuro et al (U.S. Patent No. 5,991,574), of record in the previous Action, have been considered but have not been found to be persuasive for the reasons set forth below.

Applicant argues that amended Claim 1 is distinguished from Bito et al, and that it is desirable for the resin pipe that the taper angle is as small as possible. However, as stated above, Bito et al. disclose a taper angle having a tangent of 3.6×10^{-3} (the size of the body is 270 – 280 mm, 27 mm inner diameter at one end and 28 mm inner diameter at the opposite end; column 27, lines 57 – 61; Figure 2) and teaches that the angle is selected depending on the desired mechanical strength (column 27, line 53). Therefore, one of ordinary skill in the art would have

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recognized the utility of varying the angle to obtain a desired mechanical strength. Therefore, the mechanical strength would be readily determined through routine optimization of the angle by one having ordinary skill in the art depending on the desired end use of the product.


It therefore would be obvious for one of ordinary skill in the art to vary the angle in order to obtain a desired mechanical strength, since the mechanical strength would be readily determined through routine optimization by one having ordinary skill in the art depending on the desired end result as shown by Bito et al

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc Patterson, whose telephone number is (571) 272 – 1497. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM. If attempts to reach the examiner by phone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached at (571) 272 – 1498. FAX communications should be sent to (703) 872-9310. FAXs received after 4 P.M. will not be processed until the following business day.

Marc A. Patterson, PhD.

Marc Patterson
Art Unit 1772


HAROLD PYON
SUPERVISORY PATENT EXAMINER
1772

7/8/04